

REMARKS

The Examiner's continued attention to the present application is noted with appreciation. The Examiner rejected the claims under U.S.C. 103(a) as unpatentable over various combinations of Woollenweber et al., Khair, and Gladden et al. Such rejections are respectfully traversed. Woollenweber et al. is similar to Gladden in the structure of its EGR system, except that Gladden et al. use a dual-stage compressor. Thus Woollenweber et al. is actually further away from the present invention than Gladden et al. Including Woollenweber in the present rejections does not affect patentability arguments for the present invention.

The Examiner stated on page 12 of the referenced Office Action that Applicant's arguments from the previous response (dated May 31, 2005) have been considered but are moot in view of the new ground(s) of rejection. Applicant respectfully requests that the Examiner fully considers such arguments, which are reprinted here for convenience. Applicant wishes to point out the argument applies equally for Woollenweber et al., since the system it discloses is similar to that of Gladden et al.

According to MPEP Section 2143.01, if the combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The EGR gas of Khair must be brought down to ambient pressure to be combined with the fresh inlet air via valve **35** (see FIG. 1, col. 4 lines 39-43, and col. 5, lines 25-27). The *mixture* is then compressed by compressor **22**. In contrast, Gladden et al. teach that ambient air **86** is first compressed by blades **50** of compressor wheel **46** *before* being combined with the EGR gas in interstage duct **64** (see FIG. 1 and col. 4, line 49- col. 5, line 12). Similarly, Woollenweber et al. teach that ambient air is first compressed by compressor **18** *before* being combined with the cooled EGR in mixing valve **35**. Thus in each case the pressure of the exhaust gas is different when it is mixed with the fresh intake air. Because Khair teaches mixing the exhaust gas with the inlet air *before* the inlet air is compressed, combining the system of Khair with that of Gladden et al., or alternatively Woollenweber et al, both of which teach that the inlet air is

mixed with the exhaust gas *after* it is compressed, would change the principle of operation of each reference.

Also, in the absence of Khair, Woollenweber et al. may not be combined with Gladden et al., since neither reference discloses a filter disposed prior to the EGR cooler. Thus, all claim limitations would not be taught or suggested by said combination of the prior art, which is required for establishing *prima facie* obviousness per MPEP Section 2143.03.

Finally, on page 9 of the above referenced Office Action, the Examiner stated that "the positioning of the diesel particulate filter before the intercooler in the above claimed positions would have been obvious to one having ordinary skill in the art. More specifically, one having ordinary skill in the art would have positioned the diesel particulate filter at any position in the EGR system in order that the exhaust gas needs to be cleaned/filtered before being delivered back to the engine." In this statement the Examiner relies upon what he considers "common knowledge in the art". However, this statement is inaccurate, and inappropriate under MPEP 2144.03(A) due to the lack of documentary evidence presented.

As remarked by Applicant in the previous response filed on January 14, 2005, "the inventor has discovered that it is advantageous to filter the exhaust before it is cooled, because the filter efficiency is dramatically increased at higher temperature. This is especially important in the context of the present invention, since the EGR particulate level must be very low in order to avoid damage to the rotating compressor wheel." There is no suggestion whatsoever in Khair, which is the only cited reference that discloses an filter disposed before the EGR cooler, that the position of the filter is important. Indeed, the filter of Khair is *optional*; there is no understanding of the importance of filter efficiency or compressor damage as discovered by the present inventor. Gladden et al. is yet another example of the level of knowledge in the art at the time the present invention was made. Gladden et al. do not disclose a filter at all; they use fluid wash injector **84**, positioned well after the cooler (indeed, positioned even after the EGR stream is mixed with intake air), to lessen fouling of downstream components.


Applicant therefore submits that Examiner's statement above is not considered to be common knowledge or well-known in the art. Thus, according to MPEP Sections 2144.03(B) and (C), Applicant

respectfully requests that the Examiner either (a) withdraw the finality of the present action and present adequate documentary evidence supporting the Examiner's statement; or (b) allow the present claims.

In view of the above amendments and remarks, it is respectfully submitted that all grounds of rejection and objection have been avoided and/or traversed. It is believed that the case is now in condition for allowance and same is respectfully requested. Applicant notes that this paper is being filed on October 3, 2005, and thus within two months of the date of the referenced Final Office Action. Applicant therefore respectfully requests the issuance of an Advisory Action allowing the present application per MPEP Section 706.07(f)(D)(1). If any issues remain the Examiner is cordially invited to telephone the undersigned agent for Applicant at the telephone number listed below, or the attorney of record, Ephraim Starr (Reg. No. 41,325), at (310) 791-9120. Authorization is given to charge payment of any fees required to Deposit Acct. 13-4213.

Respectfully submitted,

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